This application is a Continuation of App. No. 10/091,257 filed 3/5/02 now U.S. Patent 6,616,930 which is a continuation of 09/654,289 filed 9/1/00 now U.S. Patent 6,410,030 which is a continuation of 08/724,979 filed 10/4/96 now U.S. Patent 6,113,911 which is a 371 of PCT/FR95/00444 filed 4/6/95.

A) Amended by A.).

1/17/07

PEPTIDE FRAGMENT OF RESPIRATORY SYNCYTIAL VIRUS PROTEIN G, IMMUNOGENIC AGENT, PHARMACEUTICAL COMPOSITION CONTAINING IT AND PREPARATION PROCESS

The present invention relates to polypeptides which can be used especially in the preparation of immunogens and the obtainment of vaccine against respiratory syncytial virus (RSV) and to nucleotide sequences enabling them to be obtained. The invention likewise relates to an immune adjuvant protein extracted from Klebsiella pneumoniae, to compositions comprising the immunogenic polypeptides, possibly associated with such an adjuvant protein, and to their preparation process.

Respiratory syncytial virus (RSV) is the most frequent cause of respiratory illnesses in the newborn: bronchopneumopathies (bronchiolites). The WHO estimates each year 50 million cases of RSV attacks, from which 160,000 die in the entire world. There are two subgroups of the virus (subgroups A and B).

RSV is classified in the Paramyxoviridae family, a type of pneumovirus comprising a nonsegmented RNA genome, of negative polarity, coding for 10 specific proteins.

There is at present no vaccine available against RSV. Inactivated virus vaccines have been shown to be inefficaceous and have sometimes even aggravated the infections of nursing infants. In the 60's, vaccination attempts with formalin-inactivated RSV resulted in failure: instead of conferring protection at the time of reinfection due to RSV, the vaccine had the effect of aggravating the illness in the child.

The Application WO 87/04185 proposed to use structural proteins of RSV with a view to a vaccine, such as the envelop(proteins called protein F (fusion protein) or protein G, a 22 Kd glycoprotein, a 9.5 Kd protein, or the major capsid protein (protein N).

The Application WO 89/02935 describes the protective properties of the entire protein F of RSV, possibly modified in monomeric or deacetylated form.